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FACIL: 50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269

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RECIP. NAME	RECIPIENT AFFILIATION

SUBJECT: Suppl to LER 87-006-00: on 870521, QA review of completed work requests revealed that required VT2 insp not performed on high pressure valve. Caused by mgt deficiency. Insp performed. Personnel counseled. W/870914 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 16
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: AEOD/Ornstein: 1cy. 05000269

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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TITLE (4)
MISSED INSERVICE INSPECTION RESULTING IN TECHNICAL SPECIFICATION VIOLATIONS, SUPPLEMENT

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 6	0 2	8 7	8 7	— 0 0 6 —	0 0	0 9	1 4	8 7	Oconee Unit 2	0 5 0 0 0 2 7 0
									Oconee Unit 3	0 5 0 0 0 2 8 7

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)			
POWER LEVEL (10)	0 8 7	[ ] 20.402(b)	[ ] 20.405(c)	[ ] 50.73(a)(2)(iv)	[ ] 73.71(b)
		[ ] 20.405(a)(1)(i)	[ ] 50.36(c)(1)	[ ] 50.73(a)(2)(v)	[ ] 73.71(c)
		[ ] 20.405(a)(1)(ii)	[ ] 50.36(c)(2)	[ ] 50.73(a)(2)(vii)	[ ] OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*
		[ ] 20.405(a)(1)(iii)	[XX] 50.73(a)(2)(i)	[ ] 50.73(a)(2)(viii)(A)	
		[ ] 20.405(a)(1)(iv)	[ ] 50.73(a)(2)(ii)	[ ] 50.73(a)(2)(viii)(B)	
		[ ] 20.405(a)(1)(v)	[ ] 50.73(a)(2)(iii)	[ ] 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
PHILIP J. NORTH, LICENSING	7 0 4 3 7 3 - 7 4 5 6

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
E				N					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
[ ] YES *(If yes, complete EXPECTED SUBMISSION DATE)*	[XX] NO				

ABSTRACT *(Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines)* (16)

On May 21, 1987, a Quality Assurance review of completed work requests revealed that a required VT2 inspection was not performed on High Pressure Injection valve 3HP-43 and Low Pressure Service Water valve 3LPSW-18. Licensee Event Report (LER) 269/87-06 was submitted to document these missed inservice inspections. The identification of this deficiency led to the discovery of ten additional valves that should have been, but were not, VT-2 inspected as required per Technical Specification 4.2.1. Since the required VT-2 inspections were not performed on these valves, and no request for relief from testing was submitted to the NRC, Technical Specification 4.2.1 was violated. In addition, because the surveillance requirements were not met in accordance with the definition of operability, Technical Specifications Section 3.0 was also violated.

The immediate corrective action was to test the valves that were accessible.

The root cause of this incident was a management deficiency due to the failure to recognize that Technical Specifications require VT-2 testing of valves to be conducted as specified per ASME Section XI.

IE22
1/1

☆U.S.GPO:1984-0-454-481/18759

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Background

In order to ensure system integrity as part of a post maintenance activity, the ASME Boiler and Pressure Vessel Code Section XI requires a pressure test anytime a pressure retaining boundary is opened. This test is accomplished by qualified inspectors performing a visual examination of the components affected by the maintenance activity. This visual examination is called a VT-2 inspection. A VT-2 visual examination is conducted to locate evidence of abnormal leakage from pressure retaining components during the conduct of system pressure or functional testing. The VT-2 inspection is performed by visually examining the accessible external exposed surfaces of pressure retaining components for evidence of leakage. If external surfaces are inaccessible for direct visual examination, the surrounding area, including floor areas or equipment surfaces located underneath the components are visually examined for evidence of abnormal leakage. Oconee Nuclear Station Technical Specification 4.2.1 requires that inservice examinations of ASME Code Class 1, 2, and 3 components be performed in accordance with Section XI, which requires the performance of VT-2 inspections.

Description of Occurrence:

On February 13, 1986, Unit 1 was shut down for refueling. During this refueling outage, maintenance work was performed on the valves listed below. The type of work done on each of these valves required them to be VT-2 inspected per Section XI of the ASME Code. These Unit 1 valves are listed as follows:

	VALVE NO.	ISI CLASS	DATE WORKED COMPLETED
1.	1BS-14	B	March 11, 1986
2.	1N-246	B	March 15, 1986
3.	1LWD-99	B	March 26, 1986
4.	1LWD-103	B	March 26, 1986
5.	1SF-65	C	March 27, 1986
6.	1FDW-329	B	April 8, 1986
7.	1FW-65	B	May 5, 1986

After evaluating the post maintenance testing requirements for these valves, Maintenance determined VT-2 inspections could not be performed for various reasons. Some valves were inaccessible due to high radiation. Others could not be pressurized to their normal operating condition because the system configuration required for pressurization of the valve was either impractical or unsafe. Therefore, Maintenance personnel decided to postpone testing until the next Unit 1 refueling outage.

Maintenance Management did realize that VT-2 inspections were required by Section XI of the ASME Code following the work performed on these seven valves. However, due to inadequate guidance, Maintenance was not aware that Technical Specification 4.2.1 required them to request relief from the Commission before exempting the valves from VT-2 inspections.

NRC Form 366A
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On May 5, 1986, the Unit 1 refueling outage was completed and the unit was subsequently returned to service along with the seven Unit 1 valves listed. In this case, relief had not been requested from the Commission concerning the VT-2 inspection requirements addressed in Section XI of the ASME Code. Therefore, by returning these valves to service without requesting relief from the Commission, a violation of Technical Specification 4.2.1 was committed for each valve as well as certain parts of Section 3.0 (Attachment 1).

On August 16, 1986, Unit 2 was shut down for refueling. During this refueling outage, maintenance work was performed on the three valves listed below. The type of work done on each of these valves required them to be VT-2 inspected.

These Unit 2 valve are as listed follows:

	VALVE NO.	ISI CLASS	DATE WORKED COMPLETED
1.	2HP-188	A	September 2, 1986
2.	2LP-45	A	September 29, 1986
3.	2LP-19	B	October 7, 1986

Again, it was recognized that these valves were required to be VT-2 inspected. However, these valves were also determined to be inaccessible or unsafe for testing at that time. Therefore, the decision was again made to return the valves to service without performing VT-2 inspections. Subsequently, plans were made to perform VT-2 inspections during the next Unit 2 refueling outage.

On October 19, 1986, Unit 2 was returned to service along with the three valves listed above. No request for relief from VT-2 inspections for these valves was submitted to the Commission prior to returning the valves to service. Therefore, a violation of Technical Specification 4.2.1 as well as specific parts of Technical Specification 3.0 (Attachment 1) was committed for each of the three Unit 2 valves listed.

On May 21, 1987, Quality Assurance personnel discovered VT-2 inspections were missed for High Pressure Injection Valve 3HP-43 and Low Pressure Service Water valve 3LPSW-18. Licensee Event Report 269/87-06 documented the missed inspections. This discovery by Quality Assurance led to the identification of the additional deficiencies in VT-2 testing concerning the ten valves discussed in this report.

On July 22, 1987, Maintenance personnel identified the ten additional valves as being deficient in meeting the requirements of Section XI of the ASME Code. A request for relief from ASME Section XI requirements will be submitted for valves 1SF-65, 1FDW-329, 1BS-14, 2LP-19, 2LP-45, and 2HP-188. Permanent relief will be requested for valve 1BS-14, because the Building Spray system is open ended and is therefore impractical to test.

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Because of the revelation of the Technical Specification requirements concerning VT-2 inspections, the valves that were accessible and available with the units in operation were pressurized. On July 28, 1987, Maintenance personnel performed a VT-2 inspection of valves 1LWD-99 and 1LWD-103. Also, on July 30, 1987, valve 1FW-65 was pressurized and a VT-2 inspection was completed. In addition, on August 13, 1987, valve 1N-246 was pressurized allowing Maintenance personnel to perform a VT-2 inspection. The other six valves were not tested because they were not accessible or available for VT-2 inspections while the units were in operation. Therefore, a request for relief from the requirements of ASME Section XI will be submitted for these six valves.

Cause of Occurrence:

The root cause of this occurrence was determined to be a management deficiency due to the failure to adequately understand and implement the requirements of Technical Specification 4.2.1. Management philosophy was that relief from testing requirements was required, but that submittal of requests for relief to the NRC was not required prior to returning the effected valves to service.

A contributing cause of the philosophy taken concerning post maintenance VT-2 testing is the wording of 10 CFR 50.55a(g)(5). This code states that:

> "If an examination or test required by the code or addenda is determined to be impractical by the licensee and is not included in the revised Inservice Inspection (ISI) program, the basis for the determination shall be demonstrated to the satisfaction of the Commission not later than 12 months after the expiration of the initial 120-month period of operation from start of facility commercial operation and each subsequent 120-month period of operation during which the examination or test is determined to be impractical."

This code provided support to the philosophy, that failing to perform VT-2 inspections was acceptable if sufficient justification was submitted to the Commission. In other words, if a VT-2 inspection was not performed due to impractical conditions, management believed they were meeting all code and regulatory requirements as long as the Commission was notified within a year of the termination of the ISI cycle in which the test was required. In the situation discussed in this report, when the decision was made to postpone the VT-2 inspections, plans were made to perform the missed inspections at the next available opportunity. This has been the practice followed when VT-2 inspections have been postponed in the past.

Because of the failure to recognize the requirements of Technical Specification 4.2.1, management believed all post maintenance VT-2 inspection requirements were being met. It was not until Licensee Event Report 269/87-06 was written that management became aware that Technical Specification 4.2.1 had been violated. In fact, since the time this specification was approved, anytime a component was returned to service without a VT-2 inspection or without

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requesting relief from ASME Section XI before returning the component in question to service, Technical Specification 4.2.1 and associated sections of 3.0 were violated.

This Technical Specification violation has occurred numerous times in the past. Therefore, this event is considered to be recurring. However, investigation of each and every one of these incidents is not feasible. The program enhancements identified in this report and in report LER 269/87-06 will increase the assurance that this incident will not recur.

Corrective Actions:

Immediate corrective actions were to perform a VT-2 inspection on valves 1LWD-99, 1LWD-103, 1FW-65, and 1N-246.

Subsequent corrective actions were to:

o Make Maintenance personnel aware of the requirements of Technical Specification 4.2.1.

o Research Technical Specifications to identify any additional oversights pertaining to the VT-2 inspection program.

In addition to the enhancement of the post maintenance VT-2 testing program initiated as a result of LER 269/87-06, Maintenance will also incorporate revisions to this program which will evaluate and document the safety impact of not performing a required VT-2 inspection on safety related valves.

Planned corrective actions are to submit requests for relief from ASME Section XI requirements for valves 1SF-65, 1BS-14, 1FDW-329, 2HP-188, 2LP-19, and 2LP-45 by September 25, 1987.

After obtaining ISI program information from Quality Assurance, ONS management has decided post maintenance Inservice Inspections will be handled the same way regular Inservice Inspections are handled. In comparison, it must be noted that 10 CFR 50.55a also makes no distinction. However, there is a basic difference between the two programs. Regular Inservice Inspections are performed once in the first three years of the 120-month cycle, once in the next four years of the 120-month cycle, and once more in the remaining three years of the 120-month cycle. These tests are performed to meet the requirements of Articles IWB, IWC, and IWD-5000 of the ASME Section XI 1980 Edition Code and not for post maintenance activities required by Article IWA-5214(e). Post maintenance VT-2 inspections are required to be performed after the valve or pressure retaining boundary has been physically worked on.

Finally, with the identification of the requirements of Technical Specification 4.2.1, management now recognizes their responsibilities concerning the implementation of ASME Section XI requirements and relative post maintenance

VT-2 inspection criteria. Maintenance personnel responsible for implementing the post maintenance VT-2 inspection program have been counseled concerning these requirements. In addition, the present program for identifying and initiating VT-2 inspections as well as evaluating the consequences of returning a valve to service without performing a required VT-2 inspection will be enhanced. This corrective action is discussed in LER 269/87-06. With the identification of the requirements of Technical Specification 4.2.1 relative to ASME Section XI requirements, Oconee Nuclear Station Technical Specifications were reviewed for the possibility of additional oversights. No additional oversights were discovered relative to the VT-2 inspection program.

Analysis of Occurrence:

The safety impact of the potential leakage of the ten valves discussed in this report has been evaluated with respect to a) Reactor Coolant System (RCS) inventory control, b) safety system function, c) Reactor Building integrity, and d) radiation release during normal operation.

It is assumed that any postulated leakage through each valve (stem and bonnet flange leakage) is 11 drops per minute which translates to .0015 gallons per minute per valve. These leakage assumptions were obtained from the Oconee Nuclear Station Final Safety Analysis Report Page 6.0-7 and Table 6.0-2.

A. Impact On RCS Inventory Control

Since none of the valves discussed in this report are directly connected to the RCS, leakage through these valves would have no impact on the RCS inventory and pressure boundary.

B. Impact On The Safety Function Of The Valves

Only three valves have been identified as being a part of the safety system and; therefore, as having a potential to impact the safety function of the systems in which they are contained.

These valves are as follows:

1. 1BS-14: This valve is an 8" check valve located in the discharge line of the 1A Reactor Building Spray Pump. The design conditions are 200 psig at 300 degrees Fahrenheit.

2. 2LP-19: This valve is an 18" gate valve operated by an Engineered Safeguards signal. This valve is located in the suction line from the Reactor Building Sump to the Low Pressure Injection pumps. Design Conditions are 200 psig at 300 degrees Fahrenheit.

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3. 2HP-188: This valve is an 4" check valve located in the discharge line of the 2C High Pressure Injection pump. The design conditions are 3050 psig at 200 degrees Fahrenheit.

All three of these valves have the potential to divert part of the safety system flow through external leakage of the valve. However, the assumed leakage of 0.0015 gallons per minute per valve is negligible compared to the design flow of these safety systems. Therefore, the impact of any external leakage of these valves on the ability of the relative safety systems to perform their intended safety function is negligible.

C. Impact On Containment Isolation

Oconee Nuclear Station Final Safety Analysis Report (FSAR), Chapter 15.15.4 discusses the environmental impact of a maximum hypothetical accident from leakage of the engineered safeguards systems. This analysis assumes a total leakage of about 6,140 cubic centimeters per hour. Further analysis showed that the released dose to the atmosphere that could result from this leakage rate to be well below the limits of 10 CFR 100 guidelines. If we assume conservatively that all ten valves had a leakage of 330 cubic centimeters per hour and their leakage area was open to the Reactor Building atmosphere, the total leakage from containment would be 3,300 cubic centimeters per hour, which is well below the leakage assumed in Chapter 15.15.4 of the FSAR. Therefore, it can be concluded that the impact on the environment was well within the limits described in Section 15 of the FSAR.

D. Impact On Radiation Release During Normal Operation

There are no regulatory requirements pertaining to leakages from systems other than the Reactor Coolant System, the Waste Gas System, and the Letdown portion of the High Pressure Injection System (NUREG 0017). Any leakages from other systems would be handled in accordance with the ALARA practices applicable for Oconee Nuclear Station.

In conclusion, failure to inspect these valves for leakage as specified by ASME Section XI had a minimal impact on the off-site dose. Since all ten valves are located either in the Reactor Building or in the Auxiliary Building, any releases would be monitored, and identified. Therefore, the health and safety of the public were not affected as a result of not performing the VT-2 inspections discussed in this report.

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Attachment 1

Valves and Related Technical Specifications

Valve No.	Valve Description	Location	Tech. Spec. Violated
1BS-14	Check Valve on the Building Spray System	Reactor Bldg.	3.3.6c
*1FW-65	Filtered Water Valve	Reactor Bldg.	3.6.1, 3.6.2
*1FDW-329	Recirc. Valve use for Steam Generator Wet Lay-up	Reactor Bldg.	3.6.1, 3.6.2
*1N-246	Valve used to supply Nitrogen to the Pressurizer	Reactor Bldg.	3.6.1, 3.6.2
1SF-65	Valve used to drain deep end of Refueling Canal	Reactor Bldg.	N/A
*1LWD-99	Drain Valve for the Emerg. Sump	Aux. Bldg.	3.6.1, 3.6.2
*1LWD-103	Drain Valve for the Emerg. Sump	Aux. Bldg.	3.6.1, 3.6.2
2HP-188	Supplies Reactor Coolant to Emerg. Injection Header	Reactor Bldg.	3.3.1b
2LP-19	Drain off of normal sump	Aux. Bldg.	3.3.2b
2LP-45	Used to cool down the Pressurizer when the unit is shutting down	Reactor Bldg.	N/A

* Indicates containment isolation valve.

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VICE PRESIDENT
NUCLEAR PRODUCTION

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September 14, 1987

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Oconee Nuclear Station
Docket No. 50-269, -270, -289
LER 269/87-06 Supplement

Gentlemen:

Pursuant to 10CFR 50.73 Sections (a)(1) and (d), attached is a supplement to Licensee Event Report (LER) 269/87-06 concerning missed inservice inspections. This report was due to be submitted by August 31, 1987. By letter dated August 31, 1987 Duke Power Company informed the NRC that the report was in preparation and would be submitted by September 14, 1987.

This report is submitted in accordance with §50.73(a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

PJN/226/jgc

Attachment

IE22
1/1

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